



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,037	03/22/2004	David E. Ludwig	ISC-126A	1014
7590 12/02/2005			EXAMINER	
W. Eric Boyd, Esq. Irvine Sensors Corp. Bldg. 3/108 3001 Redhill Ave Costa Mesa, CA 92626			RATCLIFFE, LUKE D	
			ART UNIT	PAPER NUMBER
			3662	
DATE MAILED: 12/02/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,037	<b>Applicant(s)</b> LUDWIG ET AL.	
	<b>Examiner</b> Luke D. Ratcliffe	<b>Art Unit</b> 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 1 is objected to because of the following informalities: line 5 of claim 1 a multilayer processing module is defined as the correct term and this should be consistent throughout the claims. Line 7 of claim 1 "said processing module" should be changed to "said multilayer processing module" however the examiner understands the claim as written and will examine the claim as if the referred processing module is the multilayered processing module. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1, 3, and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz (4659931) in view of Schell (5875158).

Referring to **claim 1**, Schmitz shows a photon detector array (column 1 lines 5-15), a multilayer processing module comprised of at least two stacked layers (column 4 line 44-column 5), and integrated circuits in each of the layers (column 4 line 44-column 5) but does not show an integrated circuit with an amplifier, a differentiator, a comparator, an analog to digital converter, and a FIFO register.

Schell shows a amplifier (figure 79A Ref 6-202), a differentiator (figure 79A Ref 6-212), a comparator (figure 79A Ref 229), an analog to digital converter (figure 81), a

Art Unit: 3662

first in first out (FIFO) register in the form of a serial shift register which are the same (column 73 lines 44-52), an output to this register is inherent but does not show a photon detector array, a multiplayer processing module comprised of at least two stacked layers, and integrated circuits in each of the layers. It would have been obvious to modify Schmitz to include the signal processing circuitry taught by Schell because this circuitry is useful when taking an analog signal from a photodetector and creating a digital signal to use timing to extrapolate distance information.

Referring to **claim 3**, a T-connect is a common method of electrical connection and does not have any new or unexpected results.

Referring to **claim 4**, Schell shows a digitized value that is a one bit digital value (figures 76B and 86A) which is inherent when the circuitry of Schell is introduced to the processing module of Schmitz.

**Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz (4659931) in view of Schell (5875158) as applied to claim 1 above, and further in view of Wangler (5682229).

The combination of Schmitz and Schell does not show an outputting means that comprises at least one multiplexing circuit. Wangler shows an outputting means that comprises at least one multiplexing circuit (column 12 lines 37-47). It would have been obvious to further modify Schmitz to include the output that includes at least one multiplexing circuit because this is a common circuit to include in an output with limited connection terminals.

**Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz (4659931) in view of Schell (5875158) as applied to claim 1 above, and further in view Shyy (5262837).

The combination of Schmitz and Schell does not show a threshold that is programmable using an external programming means. Shyy shows a threshold that is programmable using an external programming means (column 3 lines 30-54). It would have been obvious to further modify Schmitz to include the external programming means taught by Shyy because this allows for the system to be controlled with greater precision and accuracy.

**Claims 6 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz (4659931) in view of Schell (5875158) as applied to claim 1 above, and further in view Yang (5214274).

Referring to **claims 6 and 7**, the combination of Schmitz and Schell does not show a detector array that is 128x128 pixels. Yang shows a detector array that is 128x128 pixels (column 2 lines 7-15). It would have been obvious to further modify Schmitz to include the detector array taught by Yang because this is a common configuration of a detector array and has no new or unexpected results.

**Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz (4659931) in view of Schell (5875158) as applied to claim 1 above, and further in view Burns (5953110).

The combination of Schmitz and Schell does not show an InGaAs detector array. Burns shows an InGaAs detector array (column 2 lines 5-27). It would have been

Art Unit: 3662

obvious to further modify Schmitz to include the InGaAs detector array taught by Burns because this is a common detector array and has no new or unexpected results.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke D. Ratcliffe whose telephone number is 571-272-3110. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LDR

LDR



THOMAS H. TARCZA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600